What is claim d is;

1. An etching method for etching an etching target film formed on a substrate placed inside an airtight processing chamber by inducing a processing gas into said processing chamber, wherein;

said processing gas contains, at least, CF_4 and N_2; and

said etching target film is constituted of an upper organic film containing Si and a lower SiO_2 film.

2. An etching method according to claim 1, wherein;

said organic film containing Si is constituted of SiO_2 containing C and H.

3. An etching method according to claim 1, wherein;

the dielectric constant of said organic film containing Si is equal to or lower than 3.0.

4. An etching method according to claim 1, wherein;

said organic film containing Si is an organic polysiloxane film.

5. An etching method according to claim 1, wherein;

said processing gas further contains Ar.

6. An etching method according to claim 1, wherein;

the flow rate ratio of CF_4 and N_2 in said processing gas is essentially set within a range of $1 \leq (N_2 \text{ flow rate} / CF_4 \text{ flow rate}) \leq 4$.

7. An etching method for etching an etching target film formed on a substrate placed inside an airtight processing chamber by inducing a processing gas into said processing chamber, wherein;

said processing gas contains, at least C_4F_8 and N_2; and

said etching target film is constituted of an upper organic film containing Si and a lower SiN film.

8. An etching method according to claim 7, wherein;

said organic film containing Si is constituted of SiO_2 containing C and H.

9. An etching method according to claim 7, wherein;

the dielectric constant of said organic film containing Si is equal to or lower than 3.0.

10. An etching method according to claim 7, wherein;

said organic film containing Si is an organic polysiloxane film.

11. An etching method according to claim 7, wherein;

said processing gas further contains Ar.

12. An etching method according to claim 7, wherein;

the flow rate ratio of C_4F_8 and N_2 in said processing gas is essentially set within a range of $10 \leq (N_2 \text{ flow rate} / C_4F_8 \text{ flow rate})$.